

WHAT IS CLAIMED IS:

1. An optical disc device in which a main beam spot and sub-beam spots are formed on an information recording surface of an optical disc with irradiation of a laser beam, and

laser power of said laser beam is intermittently boosted to record desired data on said optical disc by said main beam spot, said optical disc device comprising:

light receiving means for receiving a return light corresponding to one of said sub-beam spots, which is formed on preceding side with respect to scan of said main beam spot, and outputting a light detection result;

correcting means for suppressing changes in signal level of the light detection result caused upon boosting of the laser power of said laser beam; and

determining means for determining the light detection result obtained through said correcting means, and detecting the presence of defects on said optical disc.

2. An optical disc device according to Claim 1, wherein said correcting means further suppresses changes in signal level of the light detection result caused with meandering of a groove formed in said optical disc.

3. An optical disc device according to Claim 1, wherein said sub-beam spots are formed as a pair of beam spots produced on both sides of said main beam spot; and

said sub-beam spot formed on the preceding side is one of said pair of beam spots, which precedes in both circumferential and radial directions of said optical disc.

4. An optical disc device according to Claim 1, wherein said sub-beam spots are formed as a pair of beam spots produced on both sides of said main beam spot;

said optical disc device includes light receiving devices for receiving said pair of beam spots, respectively, and processes light detection results of said light receiving devices to generate a tracking error signal, each of said light receiving devices having a light receiving surface divided by a division line extending in the circumferential direction of said optical disc; and

said light receiving means is one of divided areas of said light receiving surface.

5. An optical disc device according to Claim 1, wherein an amount of light for writing is changed in a defective area based on a determination result of said determining means.

6. An optical disc device according to Claim 1, wherein a writing process is temporarily suspended in a defective area based on a determination result of said determining means.

7. An optical disc device according to Claim 1, wherein an alternative process is executed on data, which is assigned to writing to be made in a defective area, based on a determination result of said determining means.

8. An optical disc device comprising:
a light source for emitting a laser beam;
a diffraction grating for generating a main optical beam and at least first and second optical beams from the laser beam emitted from said light source, and forming a main beam spot and sub-beam spots on an information recording surface of an optical disc;
a photo detector for receiving a return light corresponding to one of said sub-beam spots, which is formed on preceding side with respect to scan of said main beam spot, and outputting a light detection result; and
a determination circuit for determining the light detection result of said photo detector, and detecting the presence of defects on said optical disc.

9. An optical disc device according to Claim 8, wherein said optical disc device further comprises a correction circuit for suppressing changes in signal level of the light detection result caused upon boosting of laser power of said laser beam; and

said determination circuit determines the light detection result obtained through said correction circuit, and detects the presence of defects on said optical disc.

10. An optical disc device according to Claim 9, wherein said correction circuit further suppresses changes in signal level of the light detection result caused with meandering of a groove formed in said optical disc.

11. An optical disc device according to Claim 8, wherein said sub-beam spots are formed as a pair of beam spots produced on both sides of said main beam spot; and

said sub-beam spot formed on the preceding side is one of said pair of beam spots, which precedes in both circumferential and radial directions of said optical disc.

12. An optical disc device according to Claim 8, wherein said sub-beam spots are formed as a pair of beam spots produced on both sides of said main beam spot; and

said optical disc device includes light receiving

devices for receiving said pair of beam spots, respectively, and processes light detection results of said light receiving devices to generate a tracking error signal, each of said light receiving devices having a light receiving surface divided by a division line extending in the circumferential direction of said optical disc.

13. An optical disc device according to Claim 8, wherein an amount of light for writing is changed in a defective area based on a determination result of said determination circuit.

14. An optical disc device according to Claim 8, wherein a writing process is temporarily suspended in a defective area based on a determination result of said determination circuit.

15. An optical disc device according to Claim 8, wherein an alternative process is executed on data, which is assigned to writing to be made in a defect containing area, based on a determination result of said determination circuit.

16. A control method for an optical disc device in which a main beam spot and sub-beam spots are formed on an

information recording surface of an optical disc with irradiation of a laser beam, and

laser power of said laser beam is intermittently boosted to record desired data on said optical disc by said main beam spot, said method comprising the steps of:

suppressing changes in signal level of a light detection result caused upon boosting of the laser power of said laser beam, the light detection result being obtained by receiving a return light corresponding to one of said sub-beam spots, which is formed on preceding side with respect to scan of said main beam spot; and

determining the light detection result and detecting the presence of defects on said optical disc.

17. An optical disc device in which a main beam spot and sub-beam spots are formed on an information recording surface of an optical disc with irradiation of a laser beam, and

laser power of said laser beam is intermittently boosted to record desired data on said optical disc by said main beam spot, said optical disc device comprising:

light receiving means for receiving a return light corresponding to one of said sub-beam spots, which is formed on succeeding side with respect to scan of said main beam spot, and outputting a light detection result;

correcting means for suppressing changes in signal level of the light detection result caused upon boosting of the laser power of said laser beam; and

determining means for processing the light detection result obtained through said correcting means, and determining an error in the data recorded on said optical disc by said main beam spot and an error in address data obtained from said optical disc.

18. An optical disc device according to Claim 17, wherein said correcting means further suppresses changes in signal level of the light detection result caused with meandering of a groove formed in said optical disc.

19. An optical disc device according to Claim 17, wherein said sub-beam spots are formed as a pair of beam spots produced on both sides of said main beam spot;

said optical disc device includes light receiving devices for receiving said pair of beam spots, respectively, and processes light detection results of said light receiving devices to generate a tracking error signal, each of said light receiving devices having a light receiving surface divided by a division line extending in the circumferential direction of said optical disc; and

said light receiving means is one of divided areas of

said light receiving surface.

20. An optical disc device according to Claim 17, wherein an alternative process is executed based on a determination result of said determining means.

21. An optical disc device according to Claim 17, wherein recording by said main beam spot is suspended based on a determination result of said determining means.

22. An optical disc device according to Claim 17, wherein a retry process is executed based on a determination result of said determining means.

23. An optical disc device comprising:
a light source for emitting a laser beam;
a diffraction grating for generating a main optical beam and at least first and second optical beams from the laser beam emitted from said light source, and forming a main beam spot and sub-beam spots on an information recording surface of an optical disc;
a photo detector for receiving a return light corresponding to one of said sub-beam spots, which is formed on succeeding side with respect to scan of said main beam spot, and outputting a light detection result; and

a determination circuit for processing the light detection result obtained from said light receiving means, and determining an error in the data recorded on said optical disc by said main beam spot and an error in address data obtained from said optical disc.

24. An optical disc device according to Claim 23, wherein said optical disc device further comprises a correction circuit for suppressing changes in signal level of the light detection result caused upon boosting of laser power of said laser beam; and

said determination circuit processes the light detection result obtained through said correction circuit, and determines an error in the data recorded on said optical disc by said main beam spot and an error in address data obtained from said optical disc.

25. An optical disc device according to Claim 24, wherein said correction circuit further suppresses changes in signal level of the light detection result caused with meandering of a groove formed in said optical disc.

26. An optical disc device according to Claim 23, wherein said sub-beam spots are formed as a pair of beam spots produced on both sides of said main beam spot; and

said optical disc device includes light receiving devices for receiving said pair of beam spots, respectively, and processes light detection results of said light receiving devices to generate a tracking error signal, each of said light receiving devices having a light receiving surface divided by a division line extending in the circumferential direction of said optical disc.

27. An optical disc device according to Claim 23, wherein an alternative process is executed based on a determination result of said determination circuit.

28. An optical disc device according to Claim 23, wherein recording by said main beam spot is suspended based on a determination result of said determination circuit.

29. An optical disc device according to Claim 23, wherein a retry process is executed based on a determination result of said determination circuit.

30. A control method for an optical disc device in which a main beam spot and sub-beam spots are formed on an information recording surface of an optical disc with irradiation of a laser beam, and

laser power of said laser beam is intermittently

boosted to record desired data on said optical disc by said main beam spot, said method comprising the steps of:

suppressing changes in signal level of a light detection result caused upon boosting of the laser power of said laser beam, the light detection result being obtained by receiving a return light corresponding to one of said sub-beam spots, which is formed on succeeding side with respect to scan of said main beam spot; and

processing the light detection result, and determining an error in the data recorded on said optical disc by said main beam spot and an error in address data obtained from said optical disc.

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